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Improving Discharge Planning and Education of Nursing Students: A Collaborative Approach

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Improving Discharge Planning and Education of Nursing Students:

A Collaborative Approach

A Capstone Scholarly Project Presented by:

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Abstract

Nurses require training to provide discharge teaching yet nursing students are often not assigned the task of discharge teaching and are overwhelmed by the task once they enter the workforce (London, 2004). In addition, few nursing programs provide opportunities for nursing students to participate in quality improvement projects, which is an important role in nursing. In an attempt to decrease post-discharge adverse events (AE) and increase exposure to discharge teaching and quality improvement by nursing students, 13 nursing students in a baccalaureate undergraduate nursing program assigned to a DEU in a sub-acute rehabilitation facility were provided with instruction utilizing the evidenced-based teach-back method. The nursing students conducted the discharge teaching to 22 patients discharged to home utilizing the teach-back method. Follow-up phone calls were conducted by the DNP student 72 hours after discharge utilizing a structured questionnaire to assess the effectiveness of the discharge teaching. Six target outcomes were identified. For the first five target outcomes, percentages were calculated from the responses obtained from the questionnaire, and the target outcomes were met or exceeded indicating that the evidenced-based teach-back method was an effective method to be utilized for discharge teaching. The final target outcome only revealed one statistically significant correlation between the number of medications on discharge and the patient's indication that all questions were answered prior to discharge. As the number of medications on discharge increased, so did the probability the patient would still have medication questions after discharge. The correlation identified the need to spend more time on medication teaching for patients with an increased number of medications.

Keywords: teach-back method; discharge teaching; dedicated education unit (DEU); quality improvement; nursing education

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Improving Discharge Planning Utilizing the Teach-Back Method

According to the Agency for Research and Healthcare Quality (ARHQ), discharge from the hospital can be dangerous for the patient. In one study reported by the ARHQ, approximately 20% of patients experienced an adverse event within three weeks of discharge and it is estimated that three-fourths of the events could have been prevented or ameliorated (ARHQ, 2012). One in five patients will experience an adverse event within 72 hours of discharge (Louden, 2009). Most complications post-discharge are due to adverse drug events; additionally hospital-acquired infections and procedural complications increase the risk for morbidity (ARHQ, 2012).

Statement of Problem

The frequency and severity of post-discharge events has become a national problem. In the United States, over 14% of patients hospitalized are readmitted within 30 days of discharge (Kangovi et al., 2102). In 2012, the United States government penalized facilities for excessive admissions which impacted about two-thirds of the hospitals in the United States (Alper, O'Malley & Greenwold, 2013). On average, 2 million Medicare patients are readmitted each year within 30 days of discharge costing Medicare an additional \$17.5 billion dollars (Rau, 2012). Hospitals with Medicare reimbursement risk penalties of losing up to 1%-3% of their total Medicare reimbursement based on readmission rates (Rau, 2012).

During the discharge process, there is a transfer of care from the in-patient providers to the patient, family, and primary care providers (Kripalani et al., 2007). Three key areas should be addressed with all patients prior to discharge: medication reconciliation, structured discharge communication, and patient education (ARHQ, 2012). The teach-back method, which is a comprehensive, evidenced-based strategy, has been utilized by nursing staff in some scenarios as an attempt to improve the discharge teaching process (Kornburger et al., 2012). The teach-back

method has been identified as an evidenced-based program to aide nurses in the delivery of discharge instructions to patients (MHLP, 2006). The teach-back method is recommended by the National Quality Forum (NQF), The Joint Commission (TJC) and the American Medical Association (AMA) to teach instructions and ensure understanding of the instructions by patients and family members (NQF, 2005; TJC, 2007; Kornburger et al., 2012). In the teach-back method, patients are taught information and then asked to explain back the content, in their own words (MHLP, 2006). By completing this additional step, nurses are able to assess patient understanding of the information and identify areas that need reinforcement and clarification.

Nurses require training to provide effective discharge teaching. Students are often not assigned the task of discharge teaching and are overwhelmed by the task once they enter the workforce (London, 2004). In addition, nurses are expected to participate in the quality improvement process but the majority of nursing programs do not incorporate quality improvement projects in the curricula (Murray, Douglas, Girdley, & Jarzemsky, 2008). In a traditional clinical the ratio is 1:6, faculty to students, which is not conducive for students to become immersed in quality improvement initiatives. A dedicated education unit (DEU) has shown to enhance nursing education. A DEU is different from a traditional clinical teaching model as students in the DEU are assigned to a specific unit and work 1:1 or 2:1 with a staff nurse with faculty from the educational institution overseeing the process. The education provided to nursing students on the DEU prepares them for the realities of nursing practice. The DEU provides an ideal setting to implement evidence-based practice into clinical teaching as well as integrating quality-improvement and patient safety competencies (Mulready-Shick, Kafel, Banister & Mylott, 2009).

Review of Literature

A literature search was conducted regarding the use of the teach-back method, specifically in patient teaching, quality improvement in nursing education, and DEUs. The databases PubMed, CINAHL, and Ovid were searched. The keywords utilized in the search were teach-back method, quality improvement and nursing education, and dedicated education units. The limitations imposed on all searched articles included: full-text articles, published within the last ten years, written in the English language, and studies conducted in the United States. In total, 345 articles were found. In regards to the teach-back method, articles were excluded if they did not apply the teach-back method to patient teaching or discharge planning. Articles in the nursing education and quality improvement area were excluded if they did not specifically address quality improvement for nursing students. Articles found relevant to the DEU were excluded if they were not organized studies and if they did not reference the implementation of quality improvement projects.

In total, 345 articles that were originally found based on the above criteria. Five articles were found relevant to the teach-back method and patient education, three articles were relevant to the integration of quality improvement in nursing education, and four articles were relevant to the implementation of quality improvement projects within a DEU.

Teach-back Method

The teach-back method is an evidence-based method determined to increase the patient's basic understanding of medical information. It is estimated that 47% of the population has difficulty understanding medical information provided to them by their practitioners (Kornburger et al., 2012, Weiss, 2007). Patients with an understanding of their discharge instructions are 30% less likely to be readmitted to the hospital or utilize emergency services (Bailey, 2012). Age,

literacy skills, cognitive impairment, and poor education can interfere with patient comprehension (Kripalani et al., 2007). Utilization of the teach-back method has been linked to improved patient education, outcomes, and comprehension (Bailey, 2012).

The teach-back method is endorsed as an evidenced-based teaching technique by The Joint Commission (TJC), National Quality Forum (NQF), and American Medical Association (AMA) (Kornburger et al., 2012; NQF, 2005; TJC, 2007; Weiss, 2008; White et al., 2013). According to the TJC (2007), the teach-back method is the preferred method to address National Patient Safety Goal 13 “Encourage patients’ active involvement in their own care as a patient safety strategy”. The NQF (2005) cites the teach-back method as “a widely recommended practice for effectively communicating with patients with limited literacy” (p.3). Both the NQF and the TCJ endorse the teach-back method specifically for use in the teaching and assessment of discharge instructions with both patients and caregivers (Kornburger et al., 2012; NQF, 2005; TJC, 2007). The AMA has a tool kit available to educate health care professionals in the use of the teach-back method (TJC, 2007; Weiss, 2007).

The teach-back method is a method of teaching in which the patient is asked to restate the information in their own words or demonstrate the skill taught to ensure understanding (Kornburger et al., 2012). The components of the teach-back method include: immediate clarification to correct misunderstood or incorrect information relayed back by the patient, using “living room language”, and limiting teaching to three to five concepts (Kornburger et al., 2012; MHLP, 2012). The teach-back method has been described as the “shame-free” teaching model as it puts the responsibility of teaching on the healthcare professional, not the responsibility of learning on the patient (TJC, 2007). Tips for utilization of the teach-back method include using statements such as “I want to be sure that I explained your medication correctly. Can you tell me

how you take this medicine?” or “We reviewed a lot today about your diabetes and I want to make sure that I explained things clearly. What are three strategies that will help you control your diabetes?” (TJC, 2007, p. 29). Incorporation of handouts and written material will help reinforce material taught and are recommended for use in conjunction with the teach-back method (MHLPP 2012; NQF, 2005; TJC, 2007; Weiss, 2007)

Studies have been conducted to determine the types, frequency, and risk factors for the development of post-discharge adverse events (AE). Kangovi et al. (2012) conducted a cross-sectional study of 1084 patients readmitted to two urban medical centers. The most common response from patients regarding the discharge process was that patients did not feel prepared for discharge. Increased age, severity of illness, and lower socioeconomic status increased the risk of post-discharge AE (Kangovi et al., 2012). Medication education, timely dissemination of hospital discharge summaries, discharge planning, and post-discharge follow-up (either by phone call or home visit) were the themes identified (Kangovi et al., 2012; Jack et al., 2009; Coleman et al., 2006) to improve the dissemination and comprehension of discharge information.

The teach-back method has been utilized to implement discharge teaching instructions to patients (White et al., 2013; Kornburger et al., 2012). In a prospective cohort study of 233 patients over the age of 65 that had been hospitalized within the last 13 months, the teach-back method was utilized as the method to provide discharge teaching for heart failure management. Patients that received the teach-back method of instruction were able to correctly answer teach-back questions 84.4% of the time while hospitalized and 77.1% of the time during post-discharge follow-up indicating a significant level of retention post-discharge (White et al., 2013). The authors also identified a significant level of comprehension among older and more disabled

patients after receiving the teach-back method of education, a group that traditionally has lower rates of comprehension of discharge instructions.

The teach-back method has also been studied in patients with low-literacy levels, which has been identified as a risk factor for post-discharge AEs. The National Assessment of Adult Literacy estimates that only 13% of Americans have proficient literacy skills (Kripalani et al., 2008). Furthermore, studies have demonstrated that overall, patient's recall as little as 50% of the information provided to them by physicians (Schillinger et al., 2013). Therefore, utilizing methods for teaching that will enable patients to retain information, including those with low-literacy skills, are critical to improve patient outcomes and prevent AEs.

A direct observation study conducted on 74 patients with type II diabetes was conducted to determine the frequency of physician usage of the teach-back method when a new concept was introduced (Schillinger et al., 2013). Results indicated physicians utilized the teach-back method for 20% of visits and for 12% of new concepts. Results indicated that 92% of patients with physicians utilizing the teach-back method had a hemoglobin A1c of 8.6% or less compared to 55% of the patients with physicians not utilizing the method (Schillinger et al., 2013).

Hemoglobin A1c levels are linked to estimated blood glucose levels. A person with a hemoglobin A1c level of 8% has an estimated blood glucose level of 183 mg/dL while a person with a hemoglobin A1c level of 9% has an estimated blood glucose level of 212mg/dL (Mayo Clinic, 2014). Elevated blood glucose levels are directly linked to the incidence and severity of diabetic complications (Mayo Clinic, 2014). Furthermore, high literacy levels and physician use of the teach-back method were the two independent variables associated with good glycemic control overall (Schillinger et al., 2013).

In a study conducted in a Wisconsin Children's hospital, discharge education was provided to families utilizing the teach-back method. The results on the surveys indicated that 98% of the nurses that provided discharge teaching through the teach-back method agreed that it increased comprehension of the instructions by the family (Kornburger et al., 2012). In addition, 56.9% of the nurses indicated that the teach-back method identified an opportunity to provide further clarification of the discharge instructions and remediation was conducted immediately (Kornburger et al., 2012).

Quality Improvement and Nursing Education

The IOM calls for all health care professionals to be educated to deliver patient-centered care with an emphasis on evidenced-based practice, quality improvement and informatics (Dotson & Lewis, 2013). As a requirement of their role, nurses are expected to participate in quality improvement work (Murray et al., 2010). Yet, few undergraduate nursing programs incorporate coursework in quality improvement leaving nurses unprepared for their role in quality improvement. In order to adequately prepare student nurses for their role in quality improvement, the coursework needs to incorporate classroom instruction combined with real-life context, just as the clinical components are addressed in nursing programs (Dotson & Lewis, 2013).

One undergraduate nursing program implemented a two-part quality improvement project in their curriculum. The first portion consisted of four, 75 minute classes devoted to presenting knowledge and skills that comprise the Quality and Safety Education in Nursing (QSEN) competencies that are critical to the quality improvement process (Murray et al., 2010). Overall, the project provided nursing students with valuable tools to assist in quality improvement projects to improve patient outcomes while as students and upon entry into the nursing

workforce. The combination of both classroom instruction and real-life application reinforce key concepts of quality improvement and allow students the opportunity to measure results and provide recommendation for change, both skills necessary for effective quality improvement (Murray et al., 2010).

Dotson and Lewis (2013) reported findings regarding a project implemented among senior nursing students and geriatric medicine fellows working collaboratively in an on-site quality improvement project in a long-term care setting conducted in 2010. Since the inception of the quality improvement project in 2010, wide varieties of projects have been conducted and have positively impacted the patient population. The study concluded that the inclusion of the quality improvement project not only prepares nursing students for their role in interdisciplinary quality improvement, but the positive outcomes provided to patients through the addition of this project to the curriculum (Dotson & Lewis, 2013).

The Josiah Macy Jr. Foundation funded the Institute for Healthcare Improvement to establish the Retooling Health Professions Education for Quality and Safety Initiative (Headrick et al., 2013). All six universities that participated have made major advances in the incorporation of multidisciplinary quality improvement instruction into their existing curricula as a result of the grant. With funding for future research opportunities in the evaluation of programs similar to those in this study and the education of clinically based faculty to teach in regards to quality improvement, quality improvement programs can be integrated into current nursing and medical curricula (Headrick et al., 2013).

Dedicated Education Unit (DEU)

The DEU is a clinical education model that was first developed and implemented by the Flinders University of South Australia School of Nursing (Moscatto et al., 2007). A critical

component to the DEU concept is that staff nurses provide a vital role in the education of student nurses. They provide real life experience and application of the student's knowledge and skills (Moscato et al., 2007). The DEU model creates a shift in the traditional clinical model for nursing faculty. Nursing faculty are expected to assume the role as educators for the staff nurse as opposed to provided clinical education to the nursing students. The staff nurse assumes the role of providing clinical education to the nursing student (Moscato et al., 2007).

DEU settings are beginning to increase for a number of reasons. With the increased demand and limited supply of qualified nursing faculty, DEU models allow faculty to oversee a larger number of students (Springer et al., 2012). Students, now working with staff nurses with 1:1 or 2:1 ratios now receive more individualized education as opposed to the traditional faculty to student ratios which can include up to a 10:1 student/faculty ratio. Students are provided with more opportunities to apply their classroom-based learning in the clinical setting due to the individualized attention. The staff nurse assigned to the student will work with the same student over the entire course of the clinical rotation which promotes a supportive, individualized learning environment in which the student can apply their learning and the staff nurse can make modifications to the teaching plan based on the student's learning needs (Springer et al., 2012). Utilization of this model has led to a decrease in clinical teaching costs, increased faculty time for individual students, improved satisfaction among nursing students, and increased retention in staff nurses (McKown, McKown, & Webb, 2011; Moscato et al, 2007; Ranse & Grealish, 2007).

Moscato et al. (2007) reported on a three year project that included the initiation of the DEU concept on six nursing units over three different hospitals. Students reported a higher level of satisfaction with their clinical experience when compared to those in a traditional setting. Students cited a greater understanding of individualized learning needs, autonomy, consistency

in the learning experience, and inclusion as a member of the health care team as reasons for their high level of satisfaction (Moscato et al., 2007). Since students are accepted as members of the healthcare team, they are also selected to be included in quality improvement projects within their assigned units allowing them to integrate real-life quality improvement experience into their existing clinical practicum (Mulready-Shick et al., 2009). Moscato et al. (2007) also reported higher levels of staff satisfaction with their current roles and on one DEU, 5 out of 16 staff members working with students have decided to continue to pursue advanced degrees in their field.

Other program evaluations of the DEU unit have emerged with similar themes. In the program evaluation conducted by Ranse and Grealish (2006), 25 students in the study reported feeling welcomed to the unit by staff, reinforced the learning provided in the classroom, and were given autonomy and accountability for patient assignments based on their skill level. In a smaller study conducted by Mulready-Shick et al. (2009), 16 students involved in the study reported a welcoming attitude from staff, improved safety in medication administration practices due to individual attention, ability to be involved in patient-centered care and involvement in the implementation of evidenced-based practice guidelines and quality improvement processes within the unit.

Theoretical Framework

The utilization of change theories assist organizations in the implementation of successful initiatives (Shirey, 2013). The theoretical framework utilized for this project was Kurt Lewin's Theory of Planned Change. The change theory incorporates three stages: unfreezing, moving, and refreezing. The unfreezing stage involves creating an atmosphere open to the implementation of improved methods to address an identified problem. The transition stage

involves implementing necessary procedures or education to implement the proposed change.

The refreezing stage involves implementing procedures to keep the newly identified methods in place (Lewin, 1997; Shirey, 2013; Zaccagnini & White, 2011).

In the unfreezing stage barriers to the implementation of the project and an identification of need for change was identified. An identification of incidents of post-discharge adverse events, gaps in discharge teaching, and need for preparation of students to perform discharge teaching were included. Potential factors for resistance to change included additional training for students, increased time associated with student teaching, and staff requiring additional education. The evidence regarding improved patient outcomes was utilized as motivation for the proposed intervention.

The next phase, transition, included implementation of the teach-back method to be included with discharge teaching. Nursing students were educated in this technique and staff nurses were educated in their role in the supervision of nursing students in the area of discharge teaching. Students took the lead role in discharge teaching utilizing the teach-back method. Transition occurred in the reversal of the role from nursing student as the observer to nursing student in the leadership role of the discharge teaching.

The final stage, refreezing, included changes to the nursing education curriculum to incorporate the teach-back method as part of the clinical curriculum for nursing students. Students, after receiving education and demonstrating competency in the teach-back method, conducted discharge teaching on the DEU utilizing the teach-back method under the supervision of the nurse on a continued basis throughout their rotation in the DEU. Follow-up in regards to patient satisfaction and outcomes related to discharge teaching were conducted through phone calls by the DNP student to the patients that had received discharge teaching by DEU students.

Methods

The capstone project utilized the DEU to implement the teach-back method by students in an attempt to improve discharge teaching for patients on the unit and to improve compliance with discharge plans and prevent post-discharge AEs. Under the guidance of the staff nurse, the student conducted the discharge teaching to the patient. Follow-up phone calls after discharge by the DNP student to the patients assessed patient knowledge, compliance, and satisfaction with the discharge information.

The evidenced-based, quality improvement project implemented training in the teach-back method of discharge teaching for student nurses assigned to a DEU from a four-year baccalaureate nursing program. A total of 13 students participated in the DEU during the course of the project implementation. The students were in their second semester of their junior year in a baccalaureate nursing program. Prior clinical training had included nine hours in a long-term care facility, 72 hours working in pediatrics and 72 hours working in maternity. The clinical rotation involving the DEU included a specialty focus on the gerontological patient. Students completed 72 hours in the DEU in an acute rehabilitation facility over a 6 week clinical rotation.

The 1 hour training session for the nursing students was conducted by the DEU coordinator at the college in person during the clinical orientation for the DEU students. The DEU coordinator is the DNP student. The clinical orientation is part of the undergraduate program's clinical requirement so no additional time from students was required. However, the current clinical curriculum did not include methodology for discharge teaching. In the traditional clinical setting, students are not routinely responsible for the dissemination of discharge instructions but were assigned to this task within the DEU under the supervision of the staff nurse.

A curriculum for education for the teach-back method developed by the Minnesota Health Literacy Partnership (MHLP) was utilized to train the nursing students (MHLP, 2006). The training began with a 2 minute and 30 second video followed by an 18 slide PowerPoint presentation developed by the MHLP (2006). A guided discussion followed (Appendix A) and then two activities were completed in which the students practiced the utilization of the teach-back method (Appendix B) and the use of “living room language” which is a key component of the teach-back method (Appendix C) (MHLP, 2006). After the students participated in the training, the students were provided with a scenario in which to demonstrate the proper use of the teach-back method. The students demonstrated the use of the teach-back method in front of the DNP student to establish competency. Students were deemed competent by the DNP student if they are able to correctly utilize the technique within the scenario. Once the student had demonstrated competency in this area, the student was allowed to perform the teach-back method when providing discharge education using the established discharge forms in current use by the unit under the supervision of the staff nurse. The staff nurses received copies of the training materials provided to the DEU student.

The program was evaluated through follow-up discharge phone calls to the patients that received discharge teaching by the students. The phone calls were conducted by the DNP student within 72 hours after discharge. The data retrieved by the phone calls was utilized to determine patient knowledge and compliance with the discharge plan and to identify any adverse outcomes after discharge. Data was also collected in the form of comments for improvement for the discharge process.

Setting

The setting for the intervention was a 24 bed, sub-acute rehabilitation facility. The facility is located in Lowell, Massachusetts. Lowell is the fourth largest city in Massachusetts with a diverse population (City of Lowell, 2010). The population consists of 62.5% Caucasian, 16.5% Asian, 14% Latino, 4.2% African-American, and 2.5% of other ethnicities (City of Lowell, 2010). Lowell also has the second largest Cambodian population in the United States. Seventy percent of the population in Lowell has completed high school and 10% of the population is aged 65 and older (City of Lowell, 2010). Despite the diversity in Lowell, the patient population at the sub-acute rehabilitation facility consists mainly of Caucasian, English speaking patients aged 65 or older. The average length of stay by patients on the unit is 10 to 14 days. The average census on the unit is 23 patients. Students were assigned the discharge teaching for patient's they were assigned to on the unit during their clinical time.

Sample

In order to be considered for the sample, patients were required to be English speaking, alert and oriented without cognitive impairment with the ability to participate in the discharge teaching, agree to receive discharge teaching by the student, and discharged to home. Patients who did not speak English, were not discharged to home, and were cognitively impaired were not identified as possible participants in the intervention. A convenience sample of 22 patients meeting the above criteria were included in the final sample and received discharge teaching by the nursing students utilizing the teach-back method. All 13 students assigned to the DEU for their clinical rotation participated in the discharge teaching process for the 22 patients under the supervision of the staff nurse. The patients included in the sample were asked to provide a phone number for a follow-up call by the DNP student and were notified that they would receive the

phone call within 72 hours after discharge. All 22 patients identified in the sample responded to the phone call by the DNP student.

The age range of the 22 identified patients was between 67 to 92 years with a mean age of 80. Sixty-four percent of the sample were females (n=14). The length of stay of the patients included in the sample ranged from 7 to 21 days with a mean length of stay of 12 days, which falls within the average length of stay range for this facility. Race and ethnicity data was not collected on the patients.

Stakeholders

The stakeholders identified for the implementation of the project were the Director of the Rehabilitation unit, the Ethics Committee, and the staff nurses. The Director and the Ethics Committee were required to approve the project before implementation of the project. The approval and permission letter signed by the Director, after the proposal was reviewed and approved by the Ethics Committee, can be found in Appendix D. The staff nurses working with the DEU students were educated to allow the nursing student to take the lead role of the discharge teaching and to take an observational role as the staff nurses would be signing the discharge paperwork.

Budget

The training was conducted as part of the curriculum and the DNP student was in charge of developing and implementing the training. Therefore, there was a minimal budget requirement as demonstrated in Table 1. The DNP student provided the sole funding for the budget.

Timeline

The time period for implementation and evaluation of the project followed a 7 month period as demonstrated in Table 2.

Protection of Human Subjects

Institutional Review Board (IRB) approval was not required as this was a quality improvement project to improve discharge outcomes for patients through the utilization of the teach-back method conducted by nursing students. No personal patient or student identifiers were collected. No identifiable data was included in the questionnaires and each patient was assigned a number to maintain confidentiality. No identifiable risks to the patients were involved in the quality improvement intervention.

Barriers

The most significant barrier to the implementation of this program was a lower than anticipated patient census in the early stages of implementation which ultimately led to lower numbers of patient discharges eligible to be included in the sample. Low patient census and a three and a half month eligible time frame together resulted in a sample of 22. Another barrier identified during the data collection process was new nursing staff orienting to the unit. The new staff nurses were required to be observed performing discharge teaching. Therefore, priority of the discharge teaching was given to the new nurses orienting as opposed to the student, which also reduced the possible number of patients for the sample. The availability of English speaking patients was not a barrier as the majority of patients on the unit were English speaking. While potential barriers included patients who may not answer the follow-up phone calls or are unwilling to participate in a follow-up phone call these did not occur. Patients were informed and consented to the phone call during the discharge teaching process. All patients included in the sample answered the follow-up phone calls and were willing to speak with the DNP student.

Methods of Evaluation

Data collection began within 72 hours after discharge from patients who had received discharge teaching using the teach-back method by DEU students using the phone questionnaire included in Appendix E. The questionnaire was adapted from Project Red (2011) which was developed by the ARHQ to assist in the development of more effective discharge programs. Patients were contacted within 72 hours post-discharge as this time period has been identified as the most vulnerable times for post-discharge adverse events (Louden, 2009). The DNP student was in charge of the follow-up calls, therefore no additional training for staff in the use of the questionnaire was required.

Goals

The goal of the project was to improve discharge outcomes through better discharge education and to decrease preventable and ameliorable AEs after discharge. Goals focused on the understanding and compliance with discharge medications, identification of conditions that require practitioner or emergent notification, prevention of post-discharge adverse events, and satisfaction with the discharge process. An additional goal was set to determine if the age of the patient, length of stay, and the number of patient medications on discharge affected the above stated goals. Factors such as age, length of stay and poor education can significantly interfere with patient comprehension (Kripalani et al., 2007). Also, most complications post-discharge are due to adverse drug events (ARHQ, 2012). Therefore, it was necessary to determine possible correlations between these variables to identify the possibility that the variables could have an impact on results.

Six target outcomes were set for the total sample population (n=22). The target outcomes were as follows:

1. Eighty percent of patients will be able to name and provide the purpose for all medications prescribed at discharge within 72 hours post-discharge.
2. Eighty percent of patients will state compliance with the post-discharge medication regimen.
3. Eighty percent of patients can identify condition(s) that would require a call to the practitioner or emergency services.
4. Eighty percent of patients will not report an adverse event within 72 hours.
5. Ninety percent of patients will state that their questions were answered prior to discharge.
6. Explore the variables of age, length of stay, and number of medications on discharge to determine a possible correlation to target outcomes above.

Data Analysis

Responses from the follow-up phone survey were analyzed by the DNP student. The percentage of yes and no responses were calculated using the responses to determine if the target outcomes had been met. Variables of age, length of stay, and total number of medications on discharge were also analyzed using a regression analysis to determine if those variables demonstrated a statistically significant correlation on the patient's ability to identify the name and the purpose of discharge medications, compliance with the post-discharge treatment regimen, and to determine if they impacted the patient's perception of all questions answered prior to discharge.

Based on the data collected from the questionnaire, percentages for the five target outcomes were calculated and compared to the outcome targets set by the DNP student. Utilizing patient data obtained in the areas of age, length of stay and number of medications on discharge, regression analysis utilizing Microsoft Excel was conducted to determine if a statistically

significant correlation was present between the variables and the impact on the three of the target outcomes.

Results

Based on the percentages of data calculated as a results of answers obtained from the questionnaire in Appendix E, 86% of the total sample (n=19) were able to correctly provide the name and purpose of all medications prescribed and 86% (n=19) stated full compliance with the post-discharge medication regimen. Of the 22 patients in the total sample, 100% (n=22) were able to identify condition(s) that required a call to the practitioner or emergency services and 100% (n=22) did not report an adverse event within 72 hours. Lastly, 90% (n=20), stated that their questions were answered prior to discharge. Based on the above data, all target outcomes set for the sample were met.

Utilizing regression analysis, the variables of age, length of stay, number of medications on discharge, and patient ability to identify the name and purpose of the medication determination was made if there was a statistically significant correlation between the target objectives of the patient's ability to identify the name and purpose of discharge medications, compliance with the post-discharge medication regimen, and the patient's response. The patient's ability to identify condition(s) that required a call to the practitioner or emergency services was not included in the regression analysis as 100% of the patients were able to correctly identify the conditions. Report of an AE within 72 hours was also not included in the regression analysis, as 100% of the patients in the study did not report an AE.

In regard to age, no statistical significance was noted between the patient's age and the ability to identify the name and purpose of discharge medications ($p=0.91$), compliance with the treatment regimen ($p=0.13$), and stating that all questions were answered prior to discharge

($p=0.98$). In addition, no statistical significance was found in regard to the length of stay by the patient and the ability to identify the name and purpose of the discharge medications ($p=0.87$), compliance with the treatment regimen ($p=0.10$), and stating that all questions were answered prior to discharge ($p=0.50$). However, with the number of medications on discharge, while no statistically significant correlation was found in the area of the ability to identify the name and purpose of the discharge medications ($p=0.10$) and compliance with the treatment regimen ($p=0.99$), a statistically significant correlation was identified between the number of medications on discharge and the patient statement indicating all questions were answered prior to discharge ($p<0.01$, coefficient= 0.047). The weak positive coefficient in this case indicates that as the number of medications on discharge increased, the likelihood the patient will express all questions prior to discharge were answered decreased.

Discussion

The goal of the implementation of the project was to improve the discharge teaching process to produce improved patient outcomes. The target outcomes set for this project were all met to further strengthen the benefits of the use of the evidenced-based teach-back method in the area of discharge teaching. Furthermore, this project included students as the main educators in the discharge process providing the students with valuable skills in both the areas of effective discharge teaching and the role of the nurse in quality improvement projects.

While all target outcomes were met, only 86% of the total patients could identify the name and purpose of the discharge medications and stated compliance with the treatment regimen. In one case, the patient stated that the reason she did not know her medications was that “my sister takes care of all of this” and her sister was not present during the discharge teaching. The same reason was given for her lack of compliance. In this particular case, the follow-up

phone call was integral as the DNP student spoke to the sister and reviewed all the discharge instructions and answered the sister's questions, possibly preventing a post-discharge AE.

In addition, a correlation between the number of medications on discharge and the patient receiving answers to all the questions prior to discharge was identified. Two of the 22 patients included in the study stated all of their questions were not answered prior to discharge. Both patients stated the questions that were not answered were in the area of medications. The correlation is important as medication teaching is a key part of the discharge teaching process as most post-discharge complications are a result of adverse drug events (ARHQ, 2012). During the discharge process, a transfer of care occurs from the nurse to the patient; therefore, it is critical that the patient has a clear understanding of the medications and regimen to ensure compliance (Kripalani et al., 2007).

In this project, utilizing the teach-back method in discharge teaching demonstrated positive outcomes. However, based on the data obtained in this project, it is evident that more time should be spent on medication teaching in relation to the number of medications the patient is prescribed on discharge. The higher the number of medications on discharge, the more likely the patient would still have medication questions after discharge. Also, this information further indicates a need for post-discharge follow-up as an opportunity to address any questions not answered prior to discharge and to possibly assist in the prevention of post-discharge AEs.

Strengths

A strength of the study is the inclusion of a variety of patient ages, number of medications, and admission diagnosis which included coronary artery disease, pneumonia, atrial fibrillation, total knee replacements, falls, shingles, spinal fusion, and myocardial infarction. The teach-back intervention was conducted by 13 different students, so it decreased the risk that

teaching by a particular student, not the teaching method, was an indicator of success. The teach-back method was able to be utilized on patients with a range of ages and diagnoses along with a variety of students with success.

Limitations

One major limitation to the study was the lack of a control group. Due to the timeline for completion of the project and the availability of patients, a control group was not feasible for this project. In addition a longer timeline would be beneficial in future studies to allow for assessment within 72 hour post-discharge and again at 30 days post discharge utilizing the same questionnaire. Reassessment of the retention of the discharge material, compliance, and screening for AEs 30 days after discharge, would further determine the long-term effectiveness of the teach-back method.

Recommendations

Further studies should include a control group, larger patient population, and both 72 hour and 30 day follow-up of the same patient population. Also, implementation of the post-discharge phone call as a routine in the current discharge plan may be an effective way to immediately address those patients with questions remaining after discharge. While no post-discharge AEs were identified through the results, information provided in the post-discharge follow-up phone call may have assisted in prevention of future AEs. While 90% of patients expressed all questions were answered prior to discharge, several additional patients did have questions during the follow-up phone call that developed during their transition home.

Although it was not measured in this study, students did express incidentally that their comfort level with discharge teaching had increased over the course of the project implementation. The teach-back method is an important part of the education of student nurses in

the area of discharge teaching. Furthermore, nursing students should continue to be encouraged to take the lead role of discharge teaching of patients under the supervision of staff nurses to increase their knowledge and comfort level with the process.

Conclusions

This project aimed to improve patient outcomes through the enhancement of education to nursing students in the area of discharge teaching. The quality improvement project was designed to assist patients through the discharge process to prevent post-discharge AEs while improving education to nursing students to better prepare them for their role in discharge teaching and participation in quality improvement upon entry into the workforce. The students participating in the DEU at an urban sub-acute rehabilitation hospital were taught the teach-back method for discharge teaching and assumed the primary role in the discharge education of their patients. Initial results from this project indicated a positive outcome for patients based on the project implementation.

In addition to the positive outcomes achieved throughout this project, identification for future study has evolved. Achieving a larger patient sample, with a control group, and following the patient sample within 72 hours after discharge and at 30 days after discharge, will provide further information in effective discharge management. Also, the positive response by the both the nursing students in the DEU and the staff nurses further strengthens the need for more projects that include both nursing students and current nurses to work collaboratively. As a DNP with a passion for education, the plan is to ensure that future projects such as these evolve which have the possibility to simultaneously improve patient outcomes and the education of future nurses.

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Appendix A

Brief discussion

Consider including a brief discussion about how and where teach-back might be used in your setting. This is a key component of Option 1 and is especially helpful if there is limited time. Use the information below to help guide discussion around using the teach-back method.

Remind participants of the basics of teach-back:

- Asking patients to explain in their own words what they need to know or do
- A chance to check understanding and re-teach information if needed
- It is **not** a test of the patient, but of how well the clinician explained a concept
- Do **not** ask “do you understand?”

Questions to guide discussion:

1. Who has heard of the teach-back method?
2. How can using the teach-back method help in our setting?
3. What are some of your experiences using this technique?
4. Where do you think we might use teach-back here?
5. Where and when will you start using teach-back?

(MHLP, 2006)

Appendix B

Activity 1: Practice teach-back

Here are several scenarios or situations to help you practice using the teach-back method. You also can use these scenarios to practice using plain language or “living room” language. Feel free to create your own situations.

Instructions:

Ask people to break out into groups of 2 to 3 to practice

Ask participants to take turns playing the role of provider and patient. If there is a third person in a group, they would serve as observer.

Instructions for provider role: First, read the script “provider says to patient”. Most of these scripts include medical terminology and jargon that patients would not understand. After reading the script to the patient, try explaining the situation using plain language? Finally, assess your patient’s level of understanding by using the teach-back method.

Sample teach-back questions

- I want to be sure I explained everything clearly, so can you please explain it back to me so I can be sure I did?
- Tell me about what you will do when you get home.
- I know your spouse wasn’t able to come with you to this appointment. What will you tell him or her about what we discussed?

Instructions for patient role: Were you able to understand what the provider told you at first? Did it make sense? If not, ask more questions about it. Also, how would you explain it to someone else? Did you feel you had enough information or understanding to repeat it back?

Instructions for observer role: Watch the role play. Was the tone of the teaching positive? Shame-free? Did the provider use plain language? Did the provider use the teach-back method? Was the patient asked “do you understand”?

After practicing using the teach-back method, ask participants to come back together and discuss their experiences with the large group

You will need 20 minutes or more for this activity

Situation 1: new diagnosis of hypertension

The patient has just been diagnosed with hypertension (high blood pressure). The patient has an average blood pressure of 150/92 over the last 4 visits. To treat this condition, the patient will need to make serious changes to her diet (eating fewer high fat/high calorie foods and consuming less salt) and start taking medication. Other steps to reduce blood pressure include being physically active, only drinking in moderation and considering quitting smoke if they currently smoke.

Situations 2: discharge after myocardial infarction

The patient has just had a myocardial infarction (mild heart attack) and was hospitalized. Patient is now ready to be discharged. The patient needs to do the following upon returning home: 1) physical activity - take it easy for the first 4 to 6 weeks, avoid heavy lifting, and wait at least 2 weeks before sexual activity 2) diet/lifestyle - no alcohol for at least 2 weeks, if you smoke – quit and avoid second-hand smoke too, eat a healthy diet 3) medicine – take your medicine as prescribed, don’t just stop taking your medicine. Call your doctor with any questions.

Appendix C

Activity 2: Practice using “living room” language

Use plain language or “living room” language. Think about speaking like you would in your living room to family or friends. Use words that everyone can understand, not just a doctor or a nurse. Remember to keep it simple and avoid medical terminology or abbreviations when possible. This will help improve communication with patients.

Using plain language helps set a more conversational tone for visits can empower patients to speak up and play an active role in their care.

Removing medical jargon and terminology from your conversation can be difficult. If you think this could be particularly challenging for your group, use the following activity to help participants begin thinking about words that might be confusing for their patients.

Instructions:

- Use the sample practice sheet provided on the following page. Pass this sheet out to participants.
- Start them off by doing a few with the large group.
- Ask participants to translate these difficult medical terms into plain language or “living room” language.
- You will need about 10 minutes to complete this activity.

(MHLP, 2006)

Practice using plain language or “living room” language.

Medical Terms that Patients May Not Understand	
Medical Term	Plain Language
Adverse	
Analgesic	
Anti-inflammatory	
Avoid	
Contraception	
Diet	
Generic	
Internist	
Intermittent	
Oral	
Cellulitis	
Enlarge	
Lateral	
Lesion	
Lipids	
Menses	
Monitor	
Normal Range	
Osteoporosis	
Referral	
Terminal	
Toxic	
Depression	

Appendix D

January 4, 2014

Dr. Jean Martinis
DNP Program Director
University of Massachusetts, Amherst
651 North Pleasant Street
Skinner Hall
Amherst, MA 01003

Dear Dr. Martinis:

This letter is in regard to the capstone project proposal submitted by Lea Dodge to our facility. The capstone proposal entitled, "Improving Discharge Planning and Education of Nursing Students: A Collaborative Approach", has been reviewed by our facility Ethics Committee. After review, we have concluded that this would be a valuable project to our facility and provide permission for this project to be conducted at our facility.

Sincerely,

Cynthia Thornton RN, BSN
Director
D'Youville Center for Advanced Therapy

Appendix E

Post-Discharge Follow-up Data Collection Tool

(conducted via phone interview 48-72 hours post discharge)

Age:	Gender:	Diagnosis:	LOS:
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Question	Yes	No	N/A	Other Comments
1. When you left the hospital, did you know the names of the medicines your doctor prescribed for you?				
2. Do you know and understand the purpose of each medicine?				
3. Do you take each medicine as prescribed?				
4. Did you know when you should call your doctor if there was a change in your condition?				
5. Did you know how to reach your doctor?				
6. Did you know when to seek emergency care if there was a change in your condition?				
7. When you left the hospital, were you given written information about your medicines?				
8. When you left the hospital, were you given written information about your disease or condition?				
9. When you left the hospital, were you given written information about when to seek medical attention?				
10. Were you able to follow these instructions when you got home? If no, please explain.				
11. Were you told about any tests you still needed to have?				
12. Were you told if any test results had not been completed?				
13. If any tests or test results were incomplete, were you told if you were supposed to do anything about this?				
14. Were you told about follow-up appointments your doctor wanted you to have?				
15. Were these follow-up appointments scheduled for you before you left the hospital?				
16. If no, have you made your appointments?				
17. If the appointments were scheduled for you, were they made with your input so they would fit your schedule?				
18. If your input was not considered, were you able to make the appointment at the time scheduled for you? If not, why not?				
19. Did you get answers to all your questions before leaving the hospital?				
20. Was there enough time to ask your questions?				
21. Have you been hospitalized or required the use of emergent care since discharge? If yes, please explain.				
22. What else could we have done to better prepare you take care of yourself at home?				

(Adapted from Project Red, 2011)

Table 1*Budget*

Description	DNP Student	Contributed	Project Total
Personnel	\$0	\$0	\$0
Materials (handouts, reference materials)	\$150.00	\$0.00	\$150.00
Travel charges (estimated fuel required for site visits)	\$100.00	\$0.00	\$100.00
Total costs	\$250.00	\$0.00	\$250.00

Table 2

Timeline

Task	NOV	DEC	JAN	FEB	MAR	APR	MAY
Plan (draft final proposal for project, receive approval from UMass and sub-acute rehab)	X	X					
Education of students to teach-back method			X		X		
Implementation – students will provide discharge teaching to patients at sub-acute facility			X	X	X	X	
Discharge Evaluation within 48-72 hours after discharge by DNP student			X	X	X	X	
Results Analysis						X	
Dissemination of Results to UMass and Administrator of sub-acute rehab facility						X	X